

# AS/NZS 2772.2:2016 ASSESSMENT REPORT

For

**Pycom Ltd**

High Point 9 Sydenham Road, Guildford Surrey GU1 3RX, Surrey, United Kingdom

**Tested Model: Fipy 1.0**

<b>Report Type:</b> Original Report	<b>Product Type:</b> FiPy
<b>Test Engineer:</b> Max Min	<i>Max Min</i>
<b>Report Number:</b> RSHA180108015-00G	
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<b>Reviewed By:</b> Oscar Ye RF Leader	<i>Oscar Ye</i>
<b>Prepared By:</b> Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road,Kunshan,Jiangsu province,China Tel: +86-0512-86175000 Fax: +86-0512-88934268 <a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a>	

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## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

Applicant	Pycom Ltd
Tested Model	Fipy 1.0
Product Type	FiPy
Dimension	55mm (L)* 20 mm (W)*3.5 mm(H)
Power Supply	DC 3.4-5.5V

*\*All measurement and test data in this report was gathered from production sample serial number: 20180108014.  
(Assigned by the BACL. The EUT supplied by the applicant was received on 2018-01-08)*

### Objective

This report is prepared on behalf of *Pycom Ltd* in accordance with EN 62311:2008, Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

The objective is to determine the compliance of EUT with EN 62311:2008.

### Related Submittal(s)/Grant(s)

No related submittal(s).

### Test Methodology

All measurements contained in this report were conducted with EN 62311:2008.

### Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

## Technical Requirements Specification in EN 62311

### General Description of Applied Standards

EN 62311 Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

### RF Exposure Evaluation

#### Limit:

According to EN 62311, the criteria listed in the below table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified table 2 of Council Recommendation 1999/519/EC.

Reference levels for electric, magnetic and electromagnetic fields  
(0 Hz to 300 GHz, unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density $S_{eq}$ (W/m <sup>2</sup> )
0-1 Hz	—	$3,2 \times 10^4$	$4 \times 10^4$	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	$4\,000/f$	$5\,000/f$	—
0,025-0,8 kHz	$250/f$	$4/f$	$5/f$	—
0,8-3 kHz	$250/f$	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	$0,73/f$	$0,92/f$	—
1-10 MHz	$87/f^{1/2}$	$0,73/f$	$0,92/f$	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\,f^{1/2}$	$0,0037\,f^{1/2}$	$0,0046\,f^{1/2}$	$f/200$
2-300 GHz	61	0,16	0,20	10

#### Notes:

1.  $f$  as indicated in the frequency range column.

**Test method**

The antenna of the product, under normal use condition is at least 20cm away from the body of the user. Warning statement of the user for keeping 20cm separation distance and the prohibition of operating to a person has been printed on the user manual. So, this product under normal use is located on electromagnetic far field between the human body.

**Far Field Calculation Formula**

$$E = \frac{\sqrt{30PG(\theta, \phi)}}{r}$$

G = antenna gain relative to an isotropic antenna

$\theta, \phi$  = elevation and azimuth angles to point of investigation

r = distance from observation point to the antenna

**Test Data****Environmental Conditions**

<b>Temperature:</b>	24.1 °C
<b>Relative Humidity:</b>	50 %
<b>ATM Pressure:</b>	101.0 kPa

The testing was performed by Max Min on 2018-06-23

Function	Frequency Range (MHz)	EIRP (dBm)	EIRP (mW)	E-Field Strength (V/m)	E-Field Limit (V/m)	Result
Wi-Fi	2412-2472	16.43	43.95	5.74	61.00	Pass
BLE	2402-2480	5.03	3.18	1.54	61.00	Pass
BT3.0	2402-2480	6.32	4.29	1.79	61.00	Pass
LoRa	915-928	19.35	86.10	8.04	41.59	Pass
Sigfox	915-928	19.49	88.92	8.17	41.59	Pass

Function	Frequency Range (MHz)	Conducted Output Power (dBm)	Conducted Output Power (mW)	E-Field Strength (V/m)	E-Field Limit (V/m)	Result
FDD (Band 3)	1710-1785	22.92	195.88	13.39	56.86	Pass
FDD (Band 20)	832-862	22.88	194.09	13.33	39.66	Pass
FDD (Band 28)	703-748	22.29	169.43	12.45	36.46	Pass

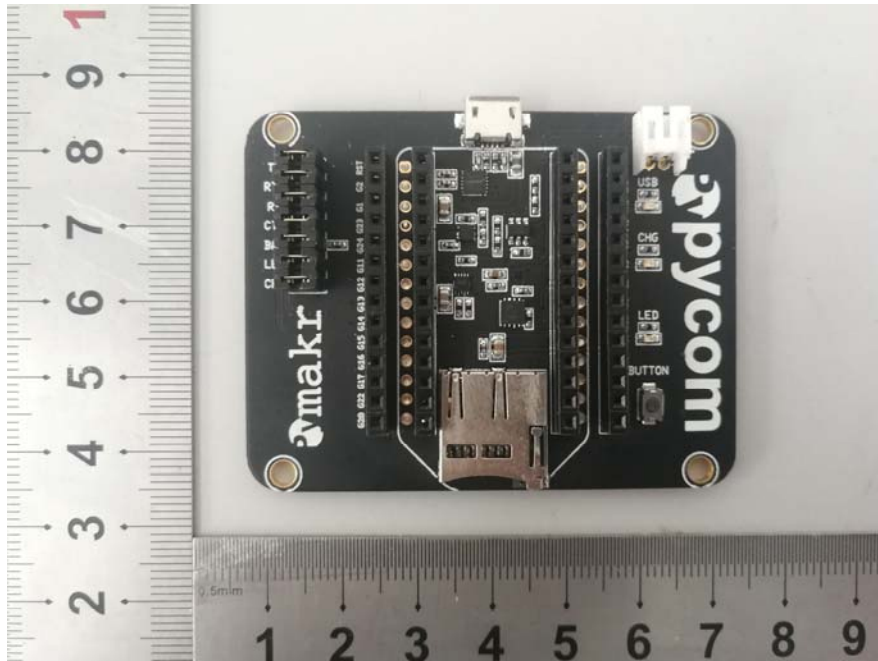
**Note:** Antenna Gain (numeric): 1.3 dBi (1.35) for Wi-Fi, BLE & BT3.0; 0.87 dBi(1.22) for LoRa and Sigfox; 2.2dBi (1.66) for FDD Band 3, band 20 & band 28.

The distance from observation point to the antenna is 20cm.

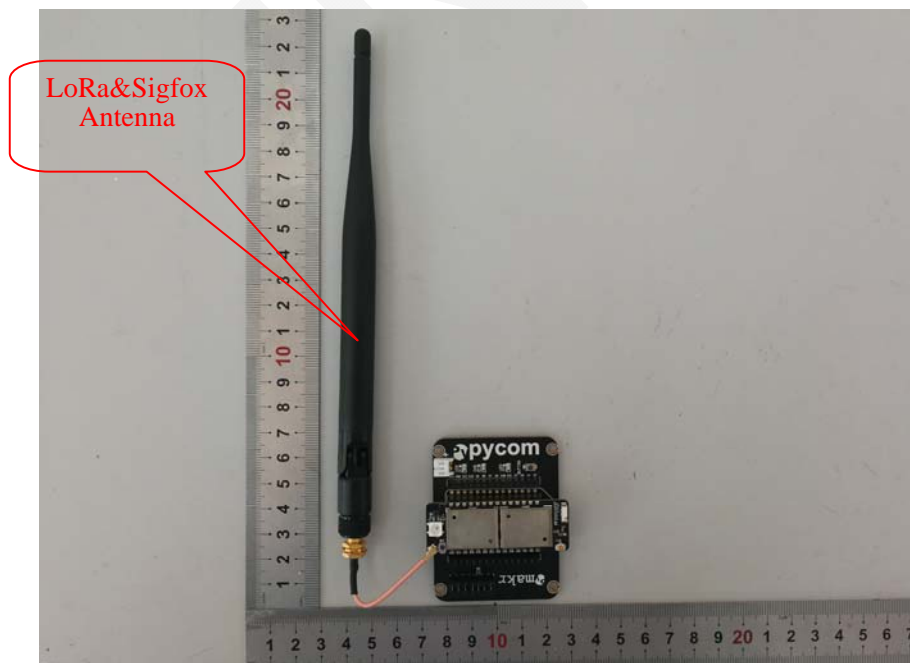
**Result:** Compliance.

## EXHIBIT A - EUT PHOTOGRAPHS

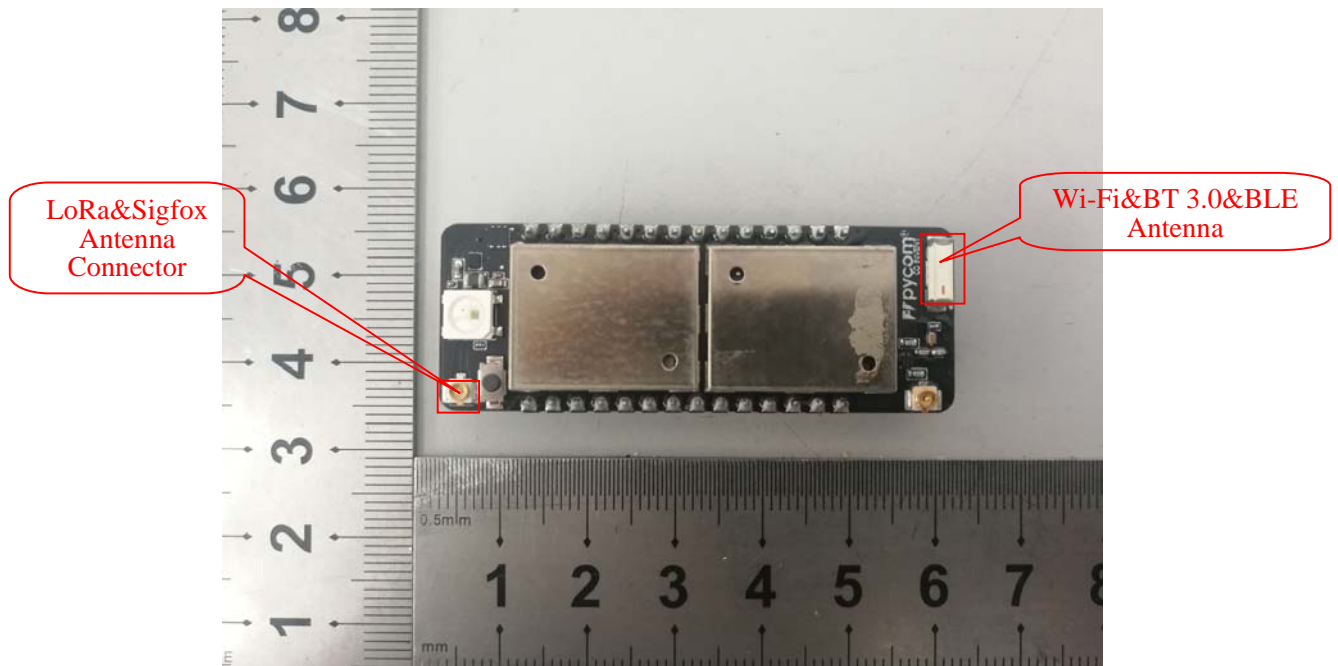
### Expansion Board View



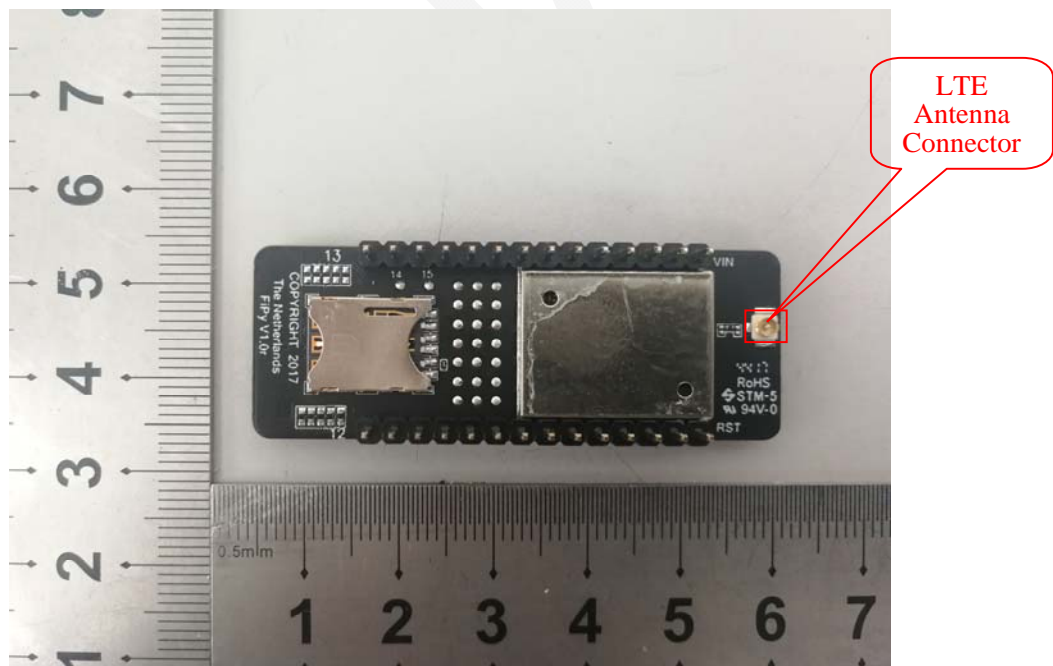
### EUT on the Expansion Board View



### EUT - Top View

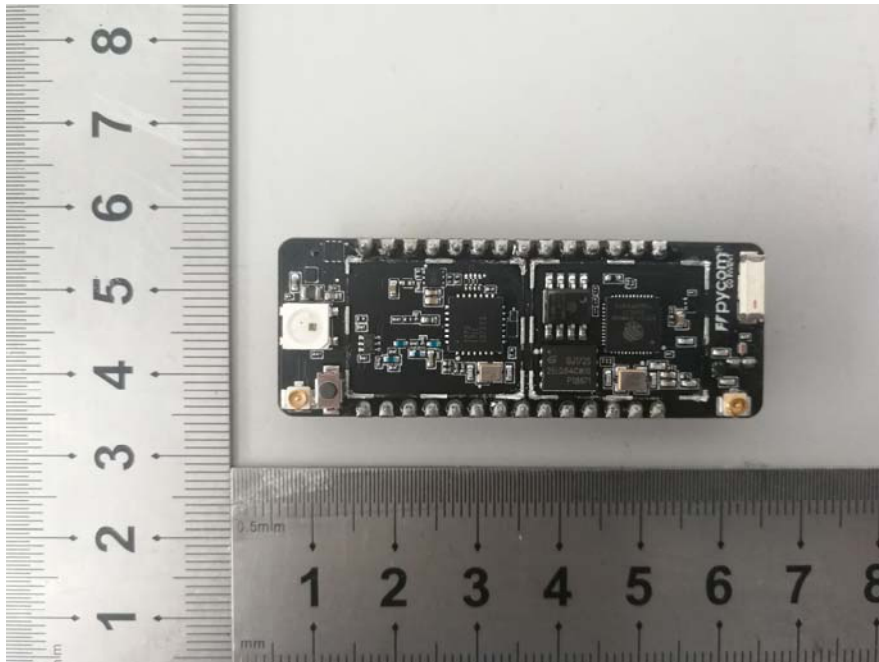


### EUT - Bottom View

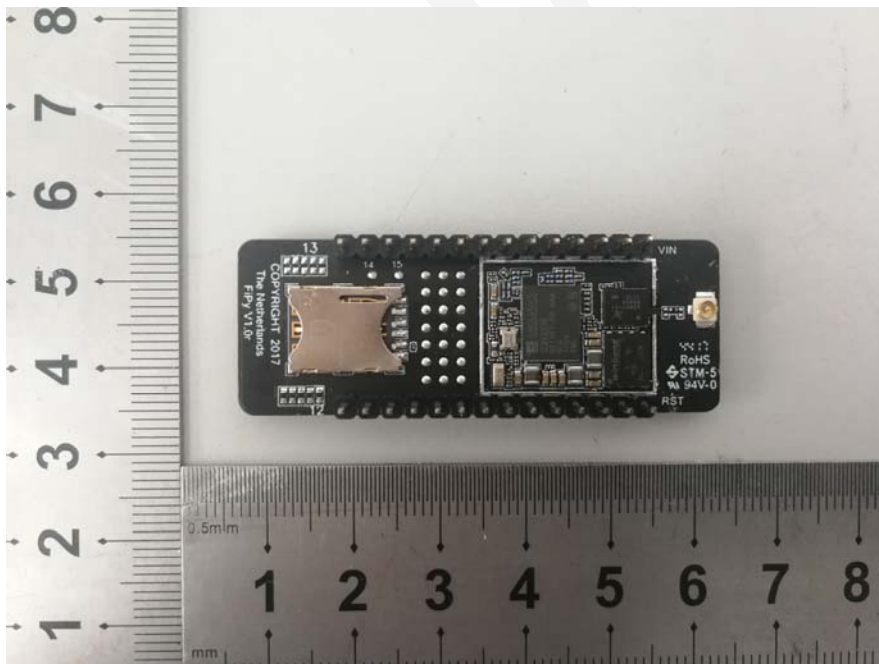




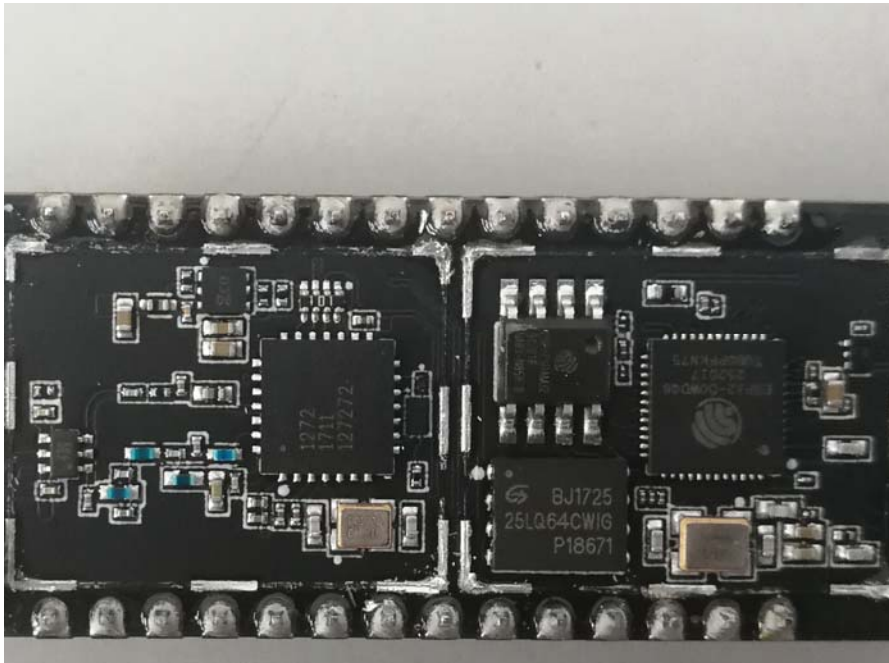
**EUT - Shielding off View-1**



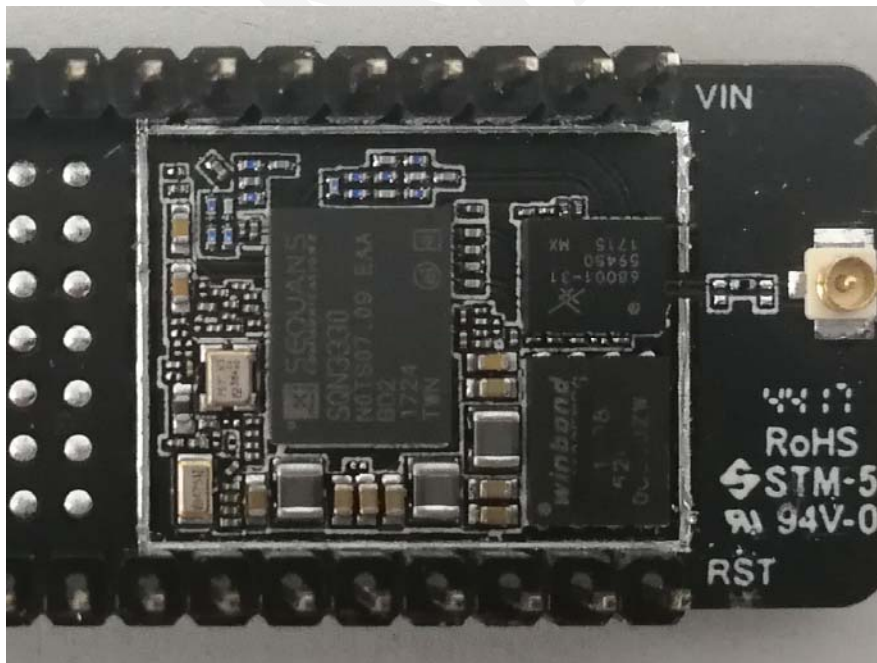
**EUT - Shielding off View-2**



### EUT – IC Chip View-1



### EUT – IC Chip View-2



\*\*\*\* END OF REPORT \*\*\*\*